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AQUEOUS, ACIDIC SOLUTION AND METHOD FOR ELECTROLYTICALLY DEPOSITING
COPPER COATINGS AS WELL AS USE OF SAID SOLUTION

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to an aqueous, acidic solution and to a method of electrolytically depositing copper coatings as well as to the use of said solution. Both solution and method preferably serve to produce high polish, decorative bright, smooth and level surfaces on large area metal or plastic parts as well as to coat printed circuit board material.

2. Brief Description of the Related Art

[0002] Various methods and deposition solutions are being used to produce decorative bright, smooth and level surfaces, more, specifically large area surfaces, on metals or plastics or to form ductile layers such as for subsequent metallization.

[0003] To this day, acid copper electrolyte solutions, more specifically the widespread sulfuric acid copper electrolyte solutions have been used forming bright copper coatings. In order to avoid formation of undesirable crystalline matte deposits, small amounts of certain organic substances are added to these solutions. At first, for example, cellulose, dextrine, gelatine, adhesive glue and molasses were used therefore, followed later by thiourea and the derivatives thereof, organic sulfides and quaternary nitrogen compounds. The relevant literature further mentions polyvinyl alcohol, organic phosphorus compounds and organic dyes like Janus green or crystal violet as additives (see "Kupferschichten--Abscheidung, Eigenschaften, Anwendung",